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## Emission controls have pluses, minuses

*Fuel consumption less on direct seeding; combine fires more frequent*

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VALLEYFORD, Wash. - It's an opportunity farmers don't get very often, and Randy Emtman made the most of it July 17 when he spoke face-to-face with the director of EPA's Region 10 Office of Air, Waste and Toxics.

A group from an alphabet soup of agencies - including the EPA, the NRCS and the WCC - met on Emtman's farm to honor him as one of 21 farmers who received a \$4-an-acre incentive to convert land to direct seeding as a means to reduce diesel emissions.

The Environmental Protection Agency funded the Diesel Emission Reduction Program as part of what's called the West Coast Collaborative, a comprehensive effort within several states to reduce sources of diesel emissions. Many of the funded projects have little to do with farming. Consider the \$200,000 grant to City College of San Francisco for working with distributors and trucking companies to promote biodiesel or the \$75,000 to install anti-idling technology on 10 switcher locomotives.

Jerry Scheele, of the Upper Columbia Resource Conservation and Development Council, said at first it wasn't clear \$4 an acre would be enough to attract farmers to make the conversion to direct seeding. But it was, and 16,000 acres made the transition at a cost of \$100,000.

"We had our doubts, but once the program started rolling, here we have most of the money contracted for," he said during a presentation at the Emtman Farm, south of Spokane.

For the record, the West Coast Collaborative estimates health benefits from diesel emission reductions reportedly outweighs costs by a 13-to-1 ratio. Which means that EPA's \$100,000 investment is actually worth \$1.3 million.

When Emtman spoke, he made sure to thank those who made the grant possible, but before that, he took the opportunity to address an issue confronting wheat farmers as a result of increasingly tighter emission controls: combine fires. Looking directly at Richard Albright, director of the EPA's air, waste and toxics office, who had flown to the event from Seattle, Emtman said the incidence of combine fires is rising.

"What is causing this now is the machines we are running are 2007 Tier 3 emission compliant, and things are running at higher temperatures in order to reburn the exhaust," he said.

As near as he can figure, engine manufacturers are bumping the exhaust valve open for a short period during the intake stroke sucking a portion of exhaust back for a second combustion. That is elevating exhaust temperatures, and a hotter exhaust in an environment with dry wheat straw is a recipe for fires.

Although Emtman expressed gratitude for the program that rewarded his family's farm and 20 others, he made it clear that agriculture and logging communities will face challenges meeting lower diesel-emission guidelines. In the context of converting to direct seed, however, total fuel usage should go down - and by extension, emissions.



Randy Emtman and his brother Jeff, at left, listen to speakers who gathered at their family farm south of Spokane talk about the Environmental Protection Agency's initiative to decrease diesel emissions by helping farmers convert to direct seeding. The Emtmans have been direct seeding for years, but with the help of the EPA grant, expanded their acreage to include direct-seeding wheat into bluegrass residue.

Different numbers were thrown around relating to the how much fuel is saved over conventional seed bed preparation. Scheele said initial projections were high. Data now show a reduction in diesel use of 57 percent when converting from conventional tillage to direct seed. Original estimates had 5.5 gallons of diesel per acre used under conventional tillage and 3.5 gallons per acre under direct seeding.

"Data are now indicating that conventional cropping uses 1.87 gallons (per acre) and direct seeding uses 0.8 gallons. This is still a dramatic reduction," he said.

But Emtman said the savings really depends on the practice and the crop. For instance, he estimated it cost \$7 an acre to prepare a seed bed conventionally after bluegrass. For the past two springs, however, the farm has been successfully direct-seeding wheat into the bluegrass residue at a fuel cost of a little over \$1 an acre.

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